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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/801,922	03/07/2001	Todor J. Fay	MS1-723US	3430

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EXAMINER	
SELLERS, DANIEL R	
ART UNIT	**PAPER NUMBER**
2615	

DATE MAILED: 11/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/801,922	FAY ET AL.	
	Examiner	Art Unit	
	Daniel R. Sellers	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14,16,17,21-23,25-43,45-55,61,66 and 68* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14,16-17,21-23,25-43,45-55,61,66 and 68* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 March 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 1-14, 16-17, 21-23, 25-43, 45-55- 61, 66, and 68 are rejected under 35 U.S.C. 101 because the claimed subject matter is directed to non-statutory subject matter.

The "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (hereinafter guidelines) directs the Office to identify non-statutory subject matter using an analysis that is believed to be in harmony with various courts rulings. Page 13 of the guidelines teaches three judicial exceptions, wherein an abstract idea is a judicial exception. Pages 19-22 teaches an analysis to determine whether or not the claimed subject matter is a practical application of a judicial exception, i.e. whether or not it is patentable.

The claimed subject matter of claims 1-14, 16-17, 21-23, 25-43, 45-55- 61, 66, and 68 fails the analysis outlined on pages 19-22, because the claims do not positively recite steps or features to assure a useful and tangible result. Claim 1, for instance, recites steps including receiving, processing, and routing audio data into and from various dynamically generated components. The end result of claim 1 is storing the transformed audio content into an audio buffer. There is no recitation in the claims to impart a utility to these steps. Claims 2-14, 16-17, 21-23, 25-43, 45-55- 61, 66, and 68 are rejected under 35 USC 101 for similar reasons. The guidelines can be found at

http://www.uspto.gov/web/offices/pac/dapp/opla/preognotice/guidelines101_20051026.pdf.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. **Claims 1-14, 16-17, 22, 23, 26-43, 46, 47, 49, and 52-55** are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamura and further in view of Maher and O'Connell, USPN 5,596,159.

5. Regarding amended **claim 1**, Tamura teaches a method of processing audio, wherein audio content is received from one or more sources (Col. 6, lines 13-17). Tamura teaches that an audio content component for each source is provided and that each component generates event instructions from the content (Col. 4, lines 5-7). The event instructions are processed to produce audio instructions (Col. 4, lines 9-12), wherein Tamura uses the phrase "sound source" to designate the audio rendition component. The sound source is a piece of hardware or software, which generates audio given the audio instructions (Col. 6, lines 47-49). Tamura does not teach a plurality of audio rendition components, but teaches that the audio rendition manager can be a hardware component with a DSP chip. A DSP is a synthesizer component, and Tamura teaches that the DSP performs the audio rendition given the proper audio instructions. Maher teaches a method of processing audio with a heterogeneous mix of processors, wherein audio content is received from one or more sources (Col. 1, lines

6-10). Maher teaches an audio rendition manager including a synthesizer component, audio buffers, and a logical bus that corresponds to one of the buffers (Col. 5, lines 23-36), wherein it is implicit that audio buffers are used in the synthesis of audio from the event instructions and it is further implicit that logical buses are created to route information from memory locations to the individual processors. Maher also teaches a synthesizer component that generates multiple streams of audio data (Col. 1, line 44 – Col. 2, line 16), wherein it is implicit that each of the multiple streams is assigned to a logical bus and it is further implicit that the streams on a logical bus correspond to a particular buffer. It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Tamura and Maher for reducing the computational load on the host processor, or CPU. Neither the Tamura nor Maher teach dynamically generating audio rendition managers with the feature of dynamically allocated components that include a synthesizer component, audio buffers, and logical buffers.

O'Connell teaches dynamically generated synthesizer components, audio buffers, and logical buffers with these features (Col. 4, line 58 - Col. 5, line 25 and Col. 10, line 34 - Col. 12, line 2). It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Tamura, Maher, and O'Connell for the purpose of reducing cost. The cost of dedicated hardware, such as separate DSPs, is greater than the cost of a general purpose CPU running software emulating the plural synthesizers (Col. 2, lines 41-54).

6. Regarding **claim 2**, the further limitation of claim 1, see Tamura,

... wherein each audio content component is a component object having an interface that is callable by a software component, the software component directing said generating the event instructions. (Col. 1, lines 26-31).

Tamura teaches that the hardware and software implementations are analogous, and Maher teaches that the multiple processors can be called to perform a specific task or set of tasks. Maher teaches that the plural audio content components have an interface that is callable by a software routing process (Col. 6, lines 16-23 and lines 40-56).

7. Regarding **claim 3**, see the above rejections of claim 2. The combination teaches the audio rendition managers.

8. Regarding **claim 4**, see the preceding argument with respect to claim 2. The combination teaches callable component that is callable by a software component, wherein the software component routes the audio instructions.

9. Regarding **claim 5**, the further limitation of claim 1, see Tamura,

... further comprising dynamically generating a performance manager that performs said providing an audio content component for each source of audio content, and performs said dynamically generating the audio rendition managers that each correspond to an audio rendition. (Col. 19, lines 61-64 and Col. 6, lines 28-32).

Tamura teaches the use of software to instantiate a plurality of audio rendition managers, and Maher teaches the use of multiple rendition managers, or processors dedicated to specific tasks. Maher teaches a performance manager (Fig. 2, unit 208). O'Connell teaches that a general CPU can perform the processing of several DSPs (Col. 5, lines 5-19), and O'Connell teaches that the CPU can perform these tasks by dynamically generating these components (Col. 11, line 63 - Col. 12, line 2).

10. Regarding **claim 6**, the further limitation of claim 1, see the above rejection of claims 5 and 2. The combination teaches these features.

11. Regarding **claim 7**, the further limitation of claim 1, see the above rejection of claim 1 and claim 5. The combination teaches a system that performs all the steps of claim 1, and Tamura also states that the task can be performed using either software or hardware.

12. Regarding **claim 8**, the further limitation of claim 1, see the above rejection of claim 1 and claim 5. The combination teaches a system that performs all the steps of claim 1, and Tamura provides an audio content for the source of audio.

13. Regarding **claim 9**, the further limitation of claim 1, see the above rejection of claim 1 and claim 5. The combination provides a performance manager, which performs the steps as shown in claim 1.

14. Regarding **claim 10**, the further limitation of claim 1, see Maher

... wherein the audio content includes digital audio samples. (Col. 7, lines 16-30).

Maher teaches the use of processing digital audio and the combination teaches the features of the parent claim.

15. Regarding **claim 11**, the further limitation of claim 1, see Tamura,

... wherein the audio content includes MIDI data. (Col. 6, lines 25-28).

Tamura teaches audio content, which is MIDI data.

16. Regarding **claims 12 and 13**, the further limitations of claim 1, see Tamura

... wherein each audio content component has one or more event instruction components that perform said generating the event instructions. AND
... wherein each audio content component has one or more event instruction components that perform said generating the event instructions, each event instruction component corresponding to part of the received audio content. (Col. 4, lines 5-7)

Tamura teaches an audio content component that inherently has instruction components, since it generates the event instructions and writes them to a memory location.

17. Regarding **claim 14**, the further limitation of claim 1, see Tamura

... further comprising each audio content component generating event instructions and routing the event instructions to the one or more audio rendition managers before said processing the event instructions. (Col. 4, lines 9-12).

Tamura teaches that the event instructions are placed in a second memory location. The audio rendition manager uses this information before processing.

18. Regarding **claims 16 and 17**, the further limitations of claim 1, see Tamura,

... wherein the audio rendition managers receive audio instructions originating as event instructions from one or more of the audio content components. AND
... wherein one audio rendition manager receives audio instructions originating as event instructions from one or more of the audio content components. (Col. 4, lines 18-22).

Tamura teaches the generation of the audio instructions from the event instructions, and teaches the use of the audio instructions in the audio rendition manager.

19. Regarding **claim 22**, the further limitation of claim 1, see Tamura,

One or more computer-readable media comprising computer-executable instructions that, when executed, direct a computing system to perform the method of claim 1. (Col. 6, lines 28-32, and lines 36-39).

Tamura teaches the use of computer-readable medium comprising of computer-executable instructions.

20. Regarding **claim 23**, the further limitation of claim 7, see the above rejection of claim 22. Tamura teaches the use of a computer-readable medium.

21. Regarding **claim 26**, see the above rejections of claims 1 and 5. The combination teaches all these features.

22. Regarding **claim 27**, the further limitation of claim 26, see the above rejection of claim 6. Tamura teaches that software and hardware are analogous.

23. Regarding **claims 28 and 30**, the further limitations of claim 26, see the above rejection of claim 7.

24. Regarding **claim 29**, the further limitation of claim 26, see the above rejection of claim 3.

25. Regarding **claim 31**, the further limitation of claim 26, see the above rejection of claim 5 and 7.

26. Regarding **claim 32**, the further limitation of claim 26, see the above rejection of claim 10.

27. Regarding **claim 33**, the further limitation of claim 26, see the above rejection of claim 11.

28. Regarding **claim 34**, the further limitation of claim 26, see the above rejection of claim 12.

29. Regarding **claim 35**, the further limitation of claim 26, see the above rejections of claims 12 and 22.

30. Regarding **claim 36**, the further limitation of claim 26, see the above rejection of claim 14.

31. Regarding **claim 37**, the further limitation of claim 26, see the above rejection of claim 1.

32. Regarding **claim 38**, the further limitation of claim 26, see the above rejection of claim 16.

33. Regarding **claim 39**, the further limitation of claim 26, see the above rejection of claim 17.

34. Regarding **claim 40**, the further limitation of claim 26, see the above rejections of claims 1, 2, and 26. The combination teaches these features, and states that software and hardware, which perform the same function, are analogous.

35. Regarding **claim 41**, the further limitation of claim 26, see the above rejection of claims 1 and 26. The combination teaches the DSP chip, which is interchangeable with software, and Maher teaches callable DSP's in synthesizing the audio from the audio instructions. O'Connell also teaches software using callable interfaces. Therefore, the combination teaches callable interfaces, whether it is hardware or software.

36. Regarding **claim 42**, the further limitation of claim 26, see Tamura,

... wherein the one or more audio buffers are component objects, each audio buffer having an interface that is callable by a software component. (Col. 6, lines 19-24).

Tamura teaches the use of output buffers, which is callable by the connected peripherals through the CPU bus (Fig. 1).

37. Regarding **claim 43**, the further limitation of claim 26, see the above rejection of claim 31 and Tamura,

... wherein each audio rendition manager is a component object, and wherein the one or more audio buffers are component objects, each audio buffer having an interface that is callable by the audio rendition manager providing the audio buffer. (Col. 7, lines 22-26).

Tamura teaches an audio buffer that is callable by the audio rendition manager.

38. Regarding **claim 46**, the further limitation of claim 26, see the above rejection of claim 22.

39. Regarding **claim 47**, the further limitation of claim 31, see the above rejections of claims 7 and 22.

40. Regarding **claim 49**, see the rejection of claim 26. The combination teaches an audio generation system.

41. Regarding **claim 52**, the further limitation of claim 49, see the above rejection of claim 27.

42. Regarding **claims 53 and 54**, the further limitations of claim 49, see the above rejection of claim 28. Tamura teaches that the performance manager can be software.

43. Regarding **claim 55**, the further limitation of claim 49, see the above rejection of claim 30.

44. **Claims 21, 25, 45, 48, 50, 51, 61, 66, and 68** are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Tamura, Maher, and O'Connell as applied to claim 1 above, and further in view of Su et al. (Su), U.S. Patent 5,852,251.

45. Regarding **claim 21**, the further limitation of claim 1, Maher teaches a method of distributing processes among several different processors, wherein a mapping component routes instructions to one of the several different processors in the system (Fig. 2, units 208, 204, and 218(1-N)). Maher also does not teach channel grouping as claimed. Tamura teaches a tone generation system, which processes music event data and provides a synthesizer to synthesize the audio wave output. Tamura teaches that software synthesizers can be used in place of hardware synthesizers. He does not specifically teach that two software synthesizers can be used concurrently, however one

skilled in the art can envision similar software modules concurrently running on any multi-tasking operating system. Tamura, also, does not teach channel grouping. O'Connell also teaches software interfaces to generate audio from MIDI instructions, but does not teach channel grouping with these features. Su teaches a method of real-time midi control and teaches that MIDI channels can be grouped in several groups to save processing time of event information that is shared across channels (Col. 2, line 65 – Col. 3, line 4). It would have been obvious to one of ordinary skill in the art to combine the teachings of Tamura, Maher, O'Connell, and Su for the purpose of better management of processing resources.

46. Regarding **claim 25**, the further limitation of claim 21, see the above rejection of claim 22.

47. Regarding **claim 45**, the further limitation of claim 26, see the above rejection of claim 21.

48. Regarding **claim 48**, the further limitation of claim 45, see the above rejection of claim 22.

49. Regarding **claim 50**, the further limitations of claim 49, see the above rejection of 21. Maher teaches the use of several audio rendition managers, wherein each is configured to receive the audio instructions for each audio rendition (Col. 5, lines 45-56).

50. Regarding **claim 51**, the further limitations of claim 49, see the above rejection of 50. Maher teaches that the renditions are rendered together (Col. 7, lines 44-51).

51. Regarding **claim 61**, see the above rejections of claims 1 and 21. Tamura teaches the use of an audio buffer for each channel (Col. 3, lines 45-47) and Su teaches the grouping of channels into channel groups. The combination teaches these features.

52. Regarding **claim 66**, the further limitation of claim 61, see the above rejection of claim 61. Tamura teaches the plurality of buffers, and controls the assignment of these buffers to a plurality of channels. O'Connell teaches the dynamic allocation of these components as taught in the combination.

53. Regarding **claim 68**, the further limitation of claim 61, see the above rejections of claims 8 and 61. The combination teaches these features.

Response to Arguments

54. Applicant's arguments with respect to claims 1-14, 16-17, 21-23, 25-43, 45-55, 61, 66, and 68 have been considered but are moot in view of the new ground(s) of rejection.

55. See the above rejections with respect to 35 USC 103. The combinations of Tamura, Maher, O'Connell and Su teach the features of the claimed invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel R. Sellers whose telephone number is 571-272-7528. The examiner can normally be reached on Monday to Friday, 9am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571)272-7564. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DRS

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SUPERVISORY PATENT EXAMINER